

37th Annual Meeting, APS Division of Plasma Physics

6-10 November 1995, Louisville, KY

Abstract Submittal Form

Deadline: Friday, 7 July 1995

Subject Classification Category 4.1

[] Theory [X] Experiment

(Refer to the DPP Subject Category list on page M12.)

Electron temperature and density measurements in gasbag plasmas by x-ray spectroscopy *, S. H. Glenzer, C.A. Back, K. Estabrook, B. J. MacGowan, D. S. Montgomery, J. D. Moody, and G. F. Stone, Lawrence Livermore, National Laboratory, L - 447, P. O. Box 808, Livermore, CA 94551. Large-scale length gasbag plasmas are currently produced with the Nova laser to study laser-plasma interactions. To diagnose these plasmas we performed time-resolved measurements of the K-shell emission of Ar/Cl gas dopants and of KBr fibers. In particular, the satellite transitions of the He- α and Ly- α of Ar are detected with high spatial (250 μ m), moderate spectral ($\lambda/\Delta\lambda = 1000$), and high temporal resolution (80 ps). We compare gasbags heated with 22kJ of 351 nm and 527 nm laser light. The results show homogeneous plasmas for 351 nm heaters at 1 ns after the onset of the heater beams. In case of the 527 nm heaters, however, there is still a cold center.

Work performed under the auspices of the U.S. Department of Energy by the Lawrence Livermore National Laboratory under contract number W-7405-ENG-48.

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Submitted by:

(Signature of APS Member)

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A faxed copy is not acceptable. This form, or a computer generated form, plus **TWO COPIES**, must be received by **Friday, 7 July, 1995** at the following address:

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